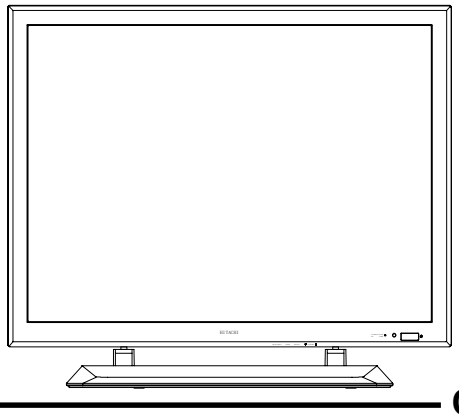
HITACHI

SERVICE MANUAL (Rev.D)

SM0059

CMP307XE
CMP307XU



Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Hitachi Plasma display. Be sure to read cautionary items described in the manual to maintain safety before servicing.

Serviceman Warning

1. Since Panel Module and front Filter are made of glass, handling to the broken Module and Filter shall be taken care sufficiently in order not to be injured.
2. Replacing work shall be started after the Panel Module and the AC/DC Power supply become sufficiently cool.
3. Special care shall be taken to the display area in order not to damage its surface.
4. The Panel Module shall not to be touched with bare hand to protect its surface from stains.
5. It recommended to use clean soft gloves during the replacing work in order to protect not only the display area of the Panel Module but also a serviceman himself.
6. The Chip Tube of Panel Module (located upper left of the back) and flexible cables connecting Panel glasses to drive circuit PWBs are very weak, so shall be taken care sufficiently not break. If you break Chip Tube, the Panel doesn't display forever.

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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

Plasma Display

September 2001 **Digital Media Systems Division**

1. Features

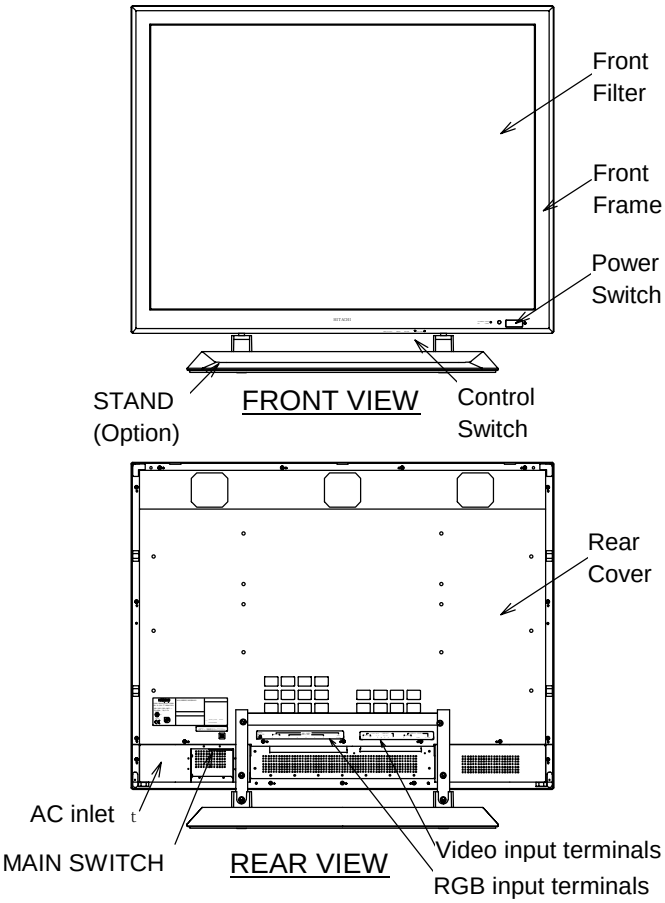
- 37 inches XGA high-definition color plasma display panel
- Newly developed Multi-scanning converter provides a multiscan coverage of TV signals through to PC analog signals (24kHz to SXGA(64kHz))
- Large high-quality display images free from color misconvergence and display distortion, as well as from geomagnetic effect and the magnetic effect of ambient power lines

2. Specifications

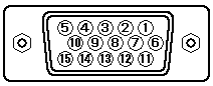
PDP Module		37 inches XGA PDP panel (aspect ratio 4:3) Description FPF37C12896UA Pixel pitch 0.735 mm(H) x 0.735 mm(V) Pixel structure RGB striped Brightness 150cd/m^2 (typical) with front filter Contrast 400:1 (typical) in dark room
Input Signal	***RGB 1*** (mD-15p) ***RGB 2*** (BNCx5)	Video : 0.7 Vp-p Sync. : Separate H/V, TTL level Composite H/V, TTL level Sync. on Green at 0.30 Vp-p
	Video 1 (RCA Pinx1, S-terminalx1)	***Composite Video or S-video (for S2)*** NTSC3.58 Video : Composite 1.0 V S-video Y: 1.0 Vp-p, C:0.29Vp-p Sync. : Composite sync
	Video 2 (RCA Pinx3)	***Component Video*** Y,Pb,Pr or Y,Cb,Cr: (480i,480P,1080i,1035i) Video : Y : 1.0 Vp-p Pb/Cb,Pr/Pr : 0.7 Vp-p Sync. : Superimposed with Y signals
Colors		2.09 million
Synchronization		Horizontal : 24 – 64 kHz Vertical : 50 - 75 Hz
Resolution		Horizontal : 1024 dots (max.) Vertical : 768 lines (max.)
Viewable Image Size		37 inches (940 mm), diagonal (typical)
Viewable Image Area		Horizontal : 753 mm (typical) Vertical : 564 mm (typical)
Color Temperature		NORM(9300 K)
Warm-up Time		30 minutes to reach optimum performance level.
Power Supply		AC 100 - 120 / 200 - 240 V (4.3A /2.2A) 50/60 Hz (automatically selected) Power Consumption : 390 W (typical) (provided with power save circuit.)
Dimensions		884 (W) x 684 (H) x 99.7 (D) mm (without stand) 884 (W) x 766 (H) x 300 (D) mm (with stand)
Weight		29.8 kg (approx.) without stand 32.8 kg (approx.) with stand
Environmental Condition		Operation / Storage Temperature 5ºC to 35ºC / 0ºC to 50ºC Humidity 20% to 80% / 20% to 80%

3. Names of each part

- **Outlook**



- **Input terminal(D-sub connector)**



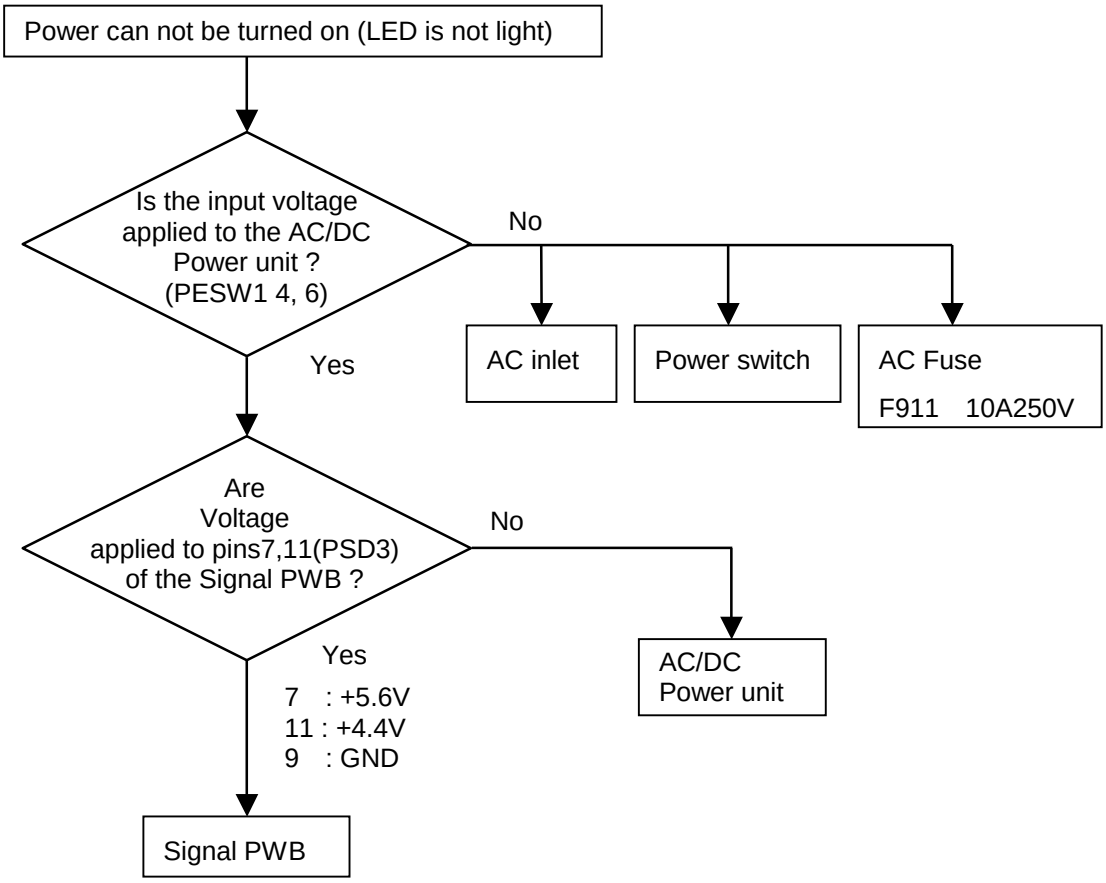
Pin No.	Signal
1	Red Video
2	Green Video (Sync. optional)
3	Blue Video
4	No connection
5	No connection
6	Red Ground
7	Green Ground
8	Blue Ground
9	No connection
10	Ground
11	No connection
12	SDA
13	H.Sync. (or H/V composite)
14	V.Sync.
15	SCL

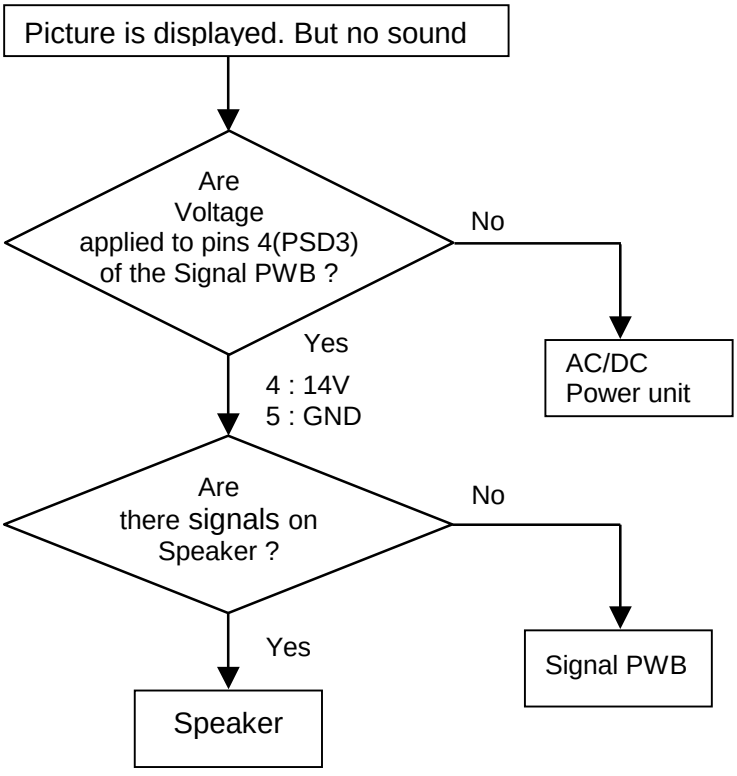
Message table

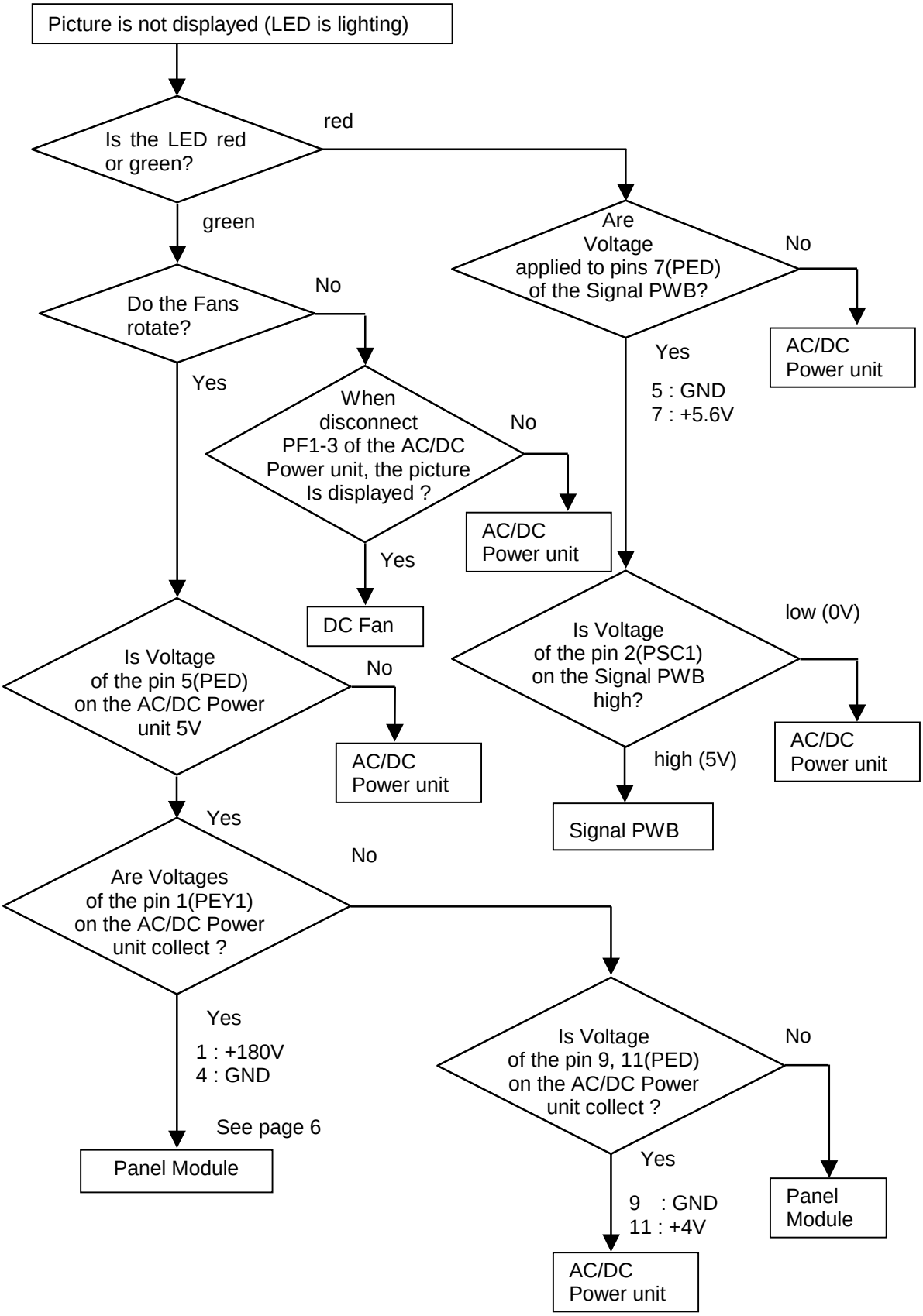
☞ Onscreen display

Indication	Condition
The monitor indicates the message "POWER SAVE".	The monitor detects no sync. signal.
The monitor indicates the message "OUT OF FREQUENCY".	The monitor detects a sync. signal which is out of specification, or unstable.

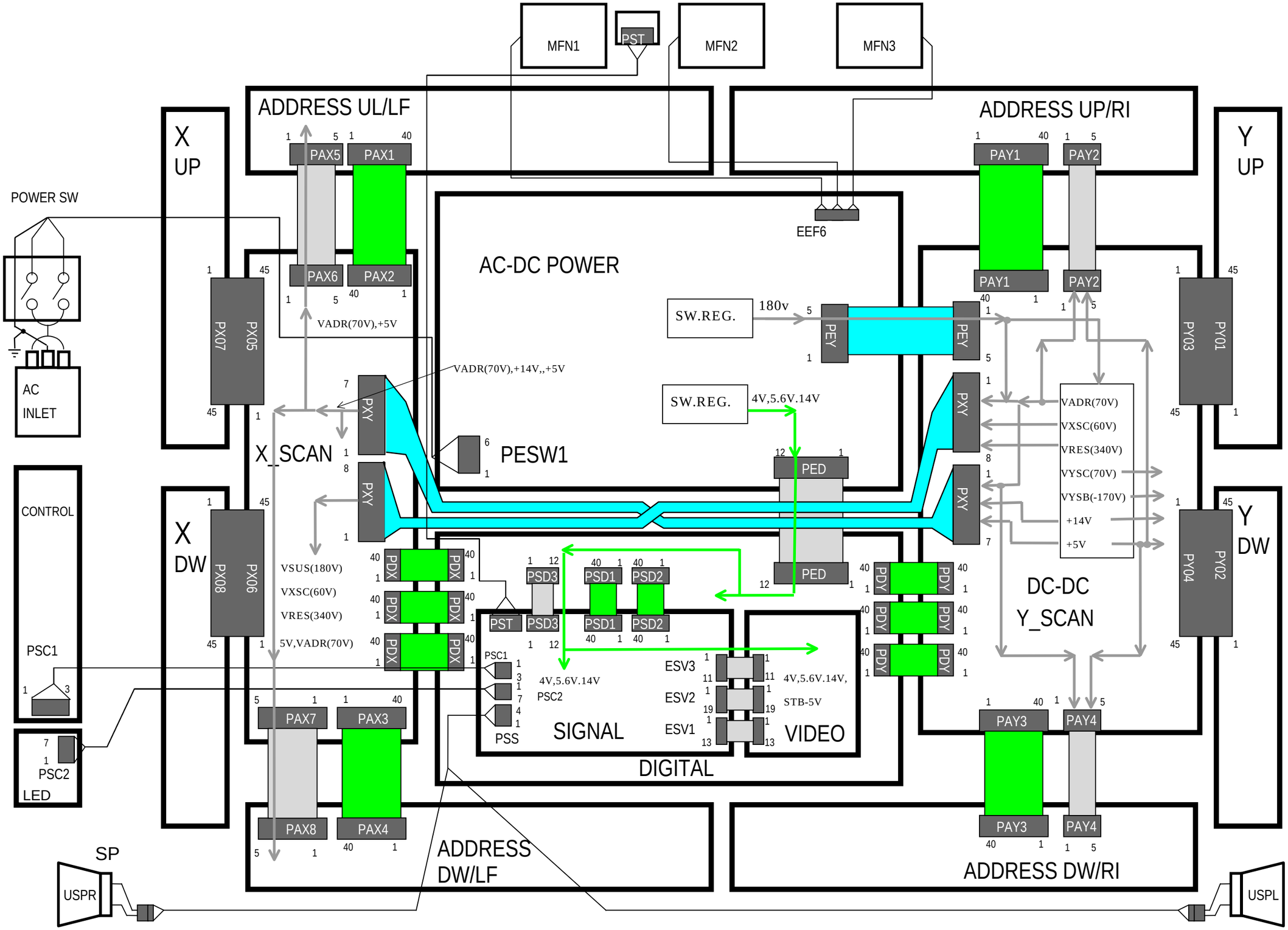
4. Trouble shooting






Picture is not displayed (LED is lighting)
Is the LED red or green?
red
green
Are Voltage applied to pins 7(PED) of the Signal PWB?
No
AC/DC Power unit
Yes
5 : GND
7 : +5.6V
Do the Fans rotate?
No
Yes
When disconnect PF1-3 of the AC/DC Power unit, the picture Is displayed ?
No
AC/DC Power unit
Yes
DC Fan
Is Voltage of the pin 2(PSC1) on the Signal PWB high?
low (0V)
AC/DC Power unit
high (5V)
Signal PWB
Is Voltage of the pin 5(PED) on the AC/DC Power unit 5V
No
AC/DC Power unit
Yes
Are Voltages of the pin 1(PEY1) on the AC/DC Power unit collect ?
No
Yes
1 : +180V
4 : GND
See page 6
Panel Module
Is Voltage of the pin 9, 11(PED) on the AC/DC Power unit collect ?
No
Yes
9 : GND
11 : +4V
AC/DC Power unit
Panel Module

5. BLOCK DIAGRAM



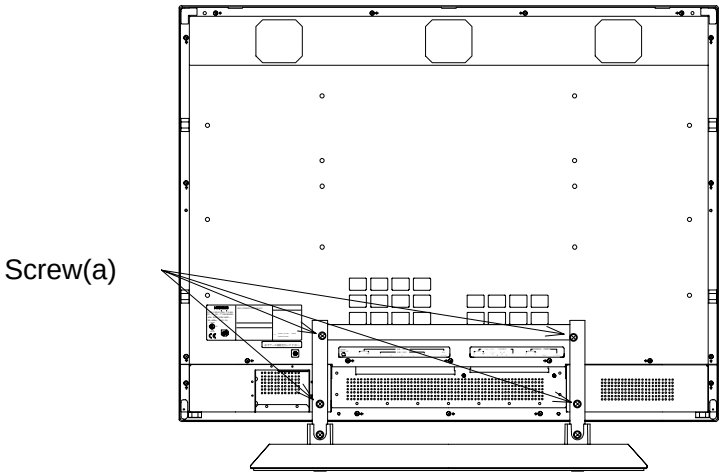
6. Disassembly diagram

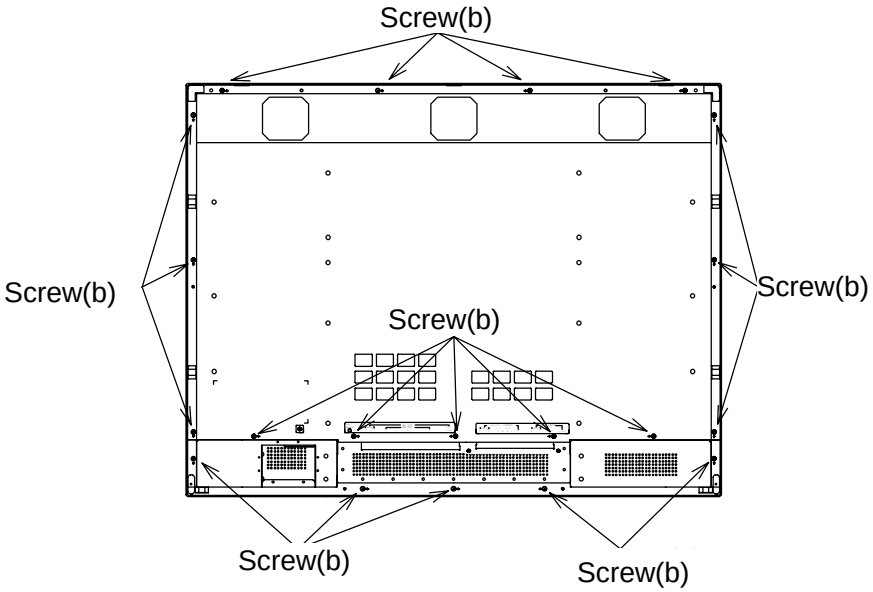
(1) Remove Back Cover

Be careful not to be damaged the face of Front Filter. Remove 4 screws(a) and remove the Rear stand.

Remove 20 screws(b) 、and remove Back Cover.

At this time be careful not to be damaged edges of Back Cover and its coated face.



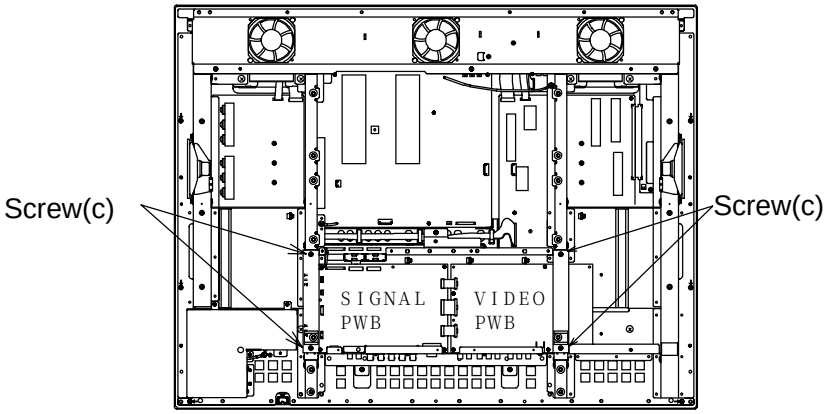


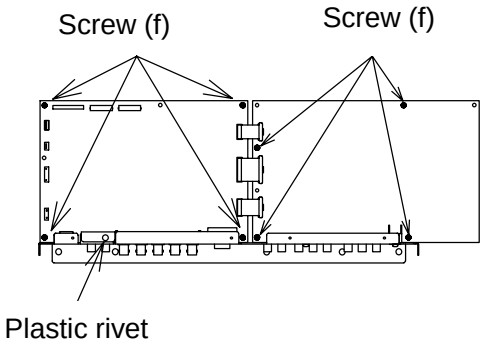
(2) Remove Signal PWB

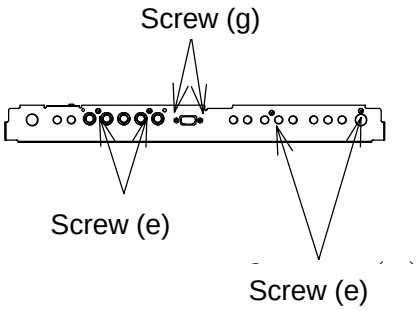
Disconnect
ESC1(PH-3P), ESC2(PH-7P),
ESS(EH4P-HR3P/HR2P),
ESD3(EH-12P), ESD2(FFC-40P) ,
PSD1(FFC-40P)
PST ,ESV3,EVC2, EVC1
connectors.

Be careful not to be damaged the PSV1-3 Connector holder.

Remove 2 screws(c), 8screws(f), plastic rivet, 4screws(e) 2screws(g) and remove Signal PWB,and Video PWB.

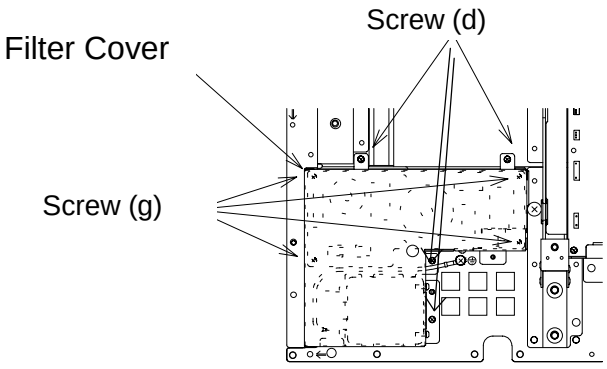






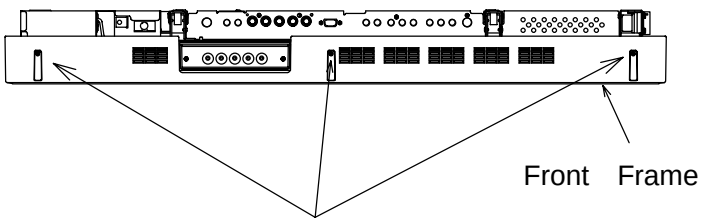
(3) Remove filter PWB

Disconnect P902A, PESW1 connector.
Remove 4screws(d) and remove the filter cover.
Then remove 4screws(g), and remove Filter PWB.

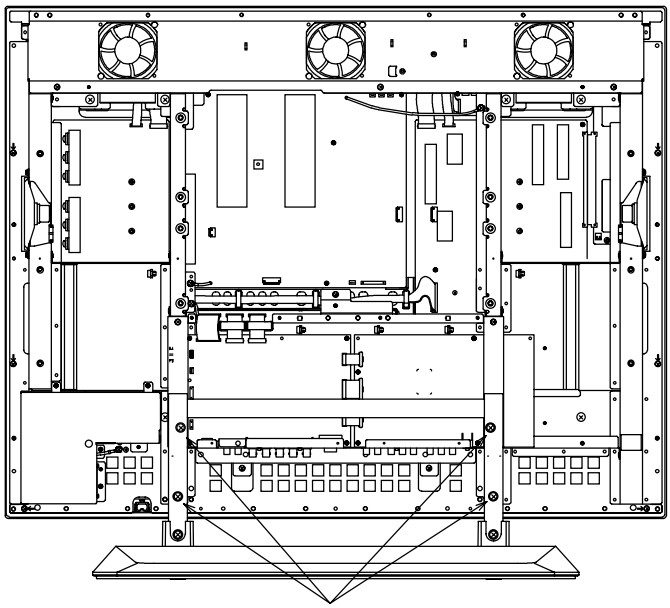


(4) Remove Front Frame

Remove 3 screws(l),then be careful not to be damaged the face of front filter.
Attached the Stand with 4screw(a), then stand it vertically.
When remove front frame.



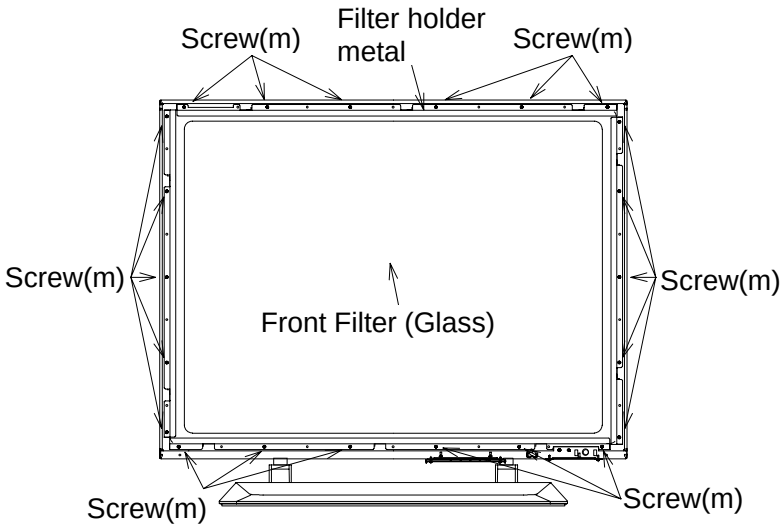
Screw (l)



Screw (a)

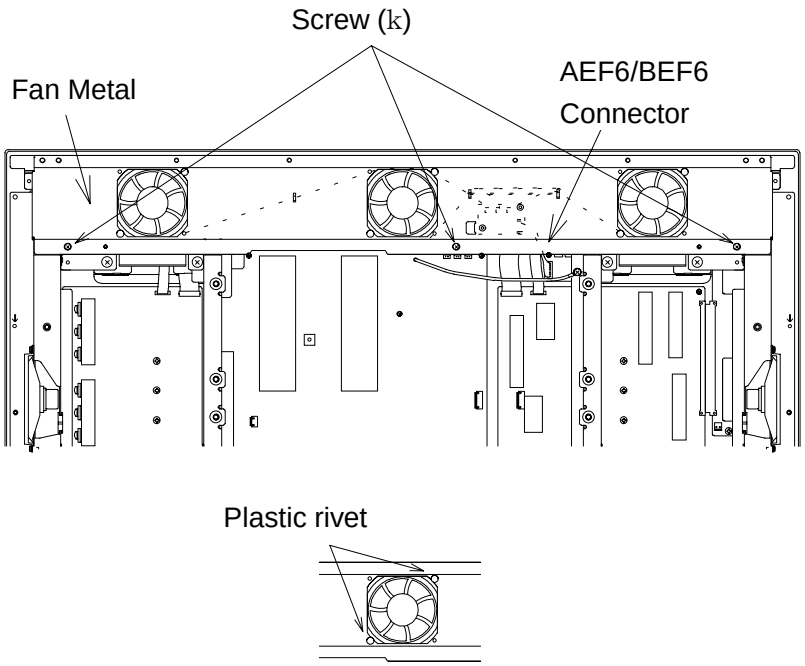
(5) Remove Front Filter(Glass)

Remove 22 screws(m), and remove Filter hold Metal and Front Filter.
Be careful not to fall down the front Filter. When remove the filter hold Metal. When attach the new Front Filter, remove protection film on a side(yellow tag is marked).Then attach to the Front Frame, locating the conducting electrode side to the inside, and attach Filter hold Metal.



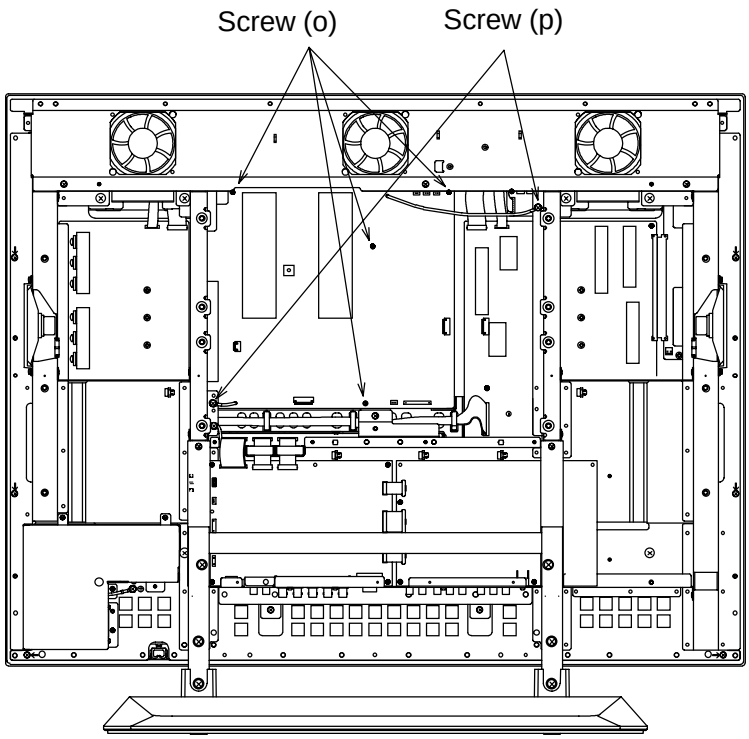
(6) Remove Fan

Remove 3screws(k),and disconnect AEF6orBEF6 connector,
Remove Fan hold Metal.
Then remove 2plastic rivets.



(7) Remove AC/DC Power unit

Remove 4 screws(o) and 2 screw(p), then disconnect
PESW1(VH-6P),
PEY1(VH-5P),
PED(EH-12P),
PF1(EH-3P),
PF2(EH-3P),
PF3(EH-3P)
connectors.



7. Re-Adjustment

After changing the Signal PWB or Panel Module, re-adjustment is needed according to the item 7.1 to 7.5 For Video PWB, item 7.3 to 7.5 are needed.

7.1 Personal Computer (PC)input black level/fundamental amplitude adjustment

How to Prepare

1.Connect RGB input terminal XGA(Vertical Sync Frequency 60Hz),0.7Vpeak,no -set up.

2.Appear and Adjust screen OSD Menu of Picture:

Contrast:127 Brightness:0, Color Select :MID, Video level :0.7V.

How to Adjust

1.Set Service Adjustment Mode and adjust as follows by Remote Control Transmitter

(7.5 Refer How to set to Service Adjustment Mode)

2.Set Adjustment No.35,36 ,and 37 scale to 255

3.Input full black level Signal

4.Set Adjustment No.41 to changing point from black to Red(set to black point)

5.Set Adjustment No.42 to changing point from black to Green(set to black point)

6.Set Adjustment No.43 to changing point from black to Blue(set to black point)

7.Input all white level Signal

8.Set Adjustment No.44 to changing point from Red to black(set to black point)

9.Set Adjustment No.45 to changing point from Green to black(set to black point)

10.Set Adjustment No.46 to changing point from Blue to black(set to black point)

Tolerances of each color adjustment numbers are less than 10, if more than 10, Re-adjust from above 2 steps.

7.2 PC color temperature adjustment

How to prepare

1.Connect RGB input terminal XGA(Vertical Sync Frequency 60Hz),0.7Vpeak, without set up signal.

2.Window color (R,G and B)should be 255 each.

and input white window(33%) Signal.

2.Appear and Adjust screen OSD Menu of Picture:

Contrast:127, Brightness:0,GAMMA:2.2,Video level:0.7V

How to Adjust

1.Set Service Adjustment Mode and adjust as follows by Remote Control Transmitter.

2.Mesurement probe of CRT Color Analyzer CA-100 is set on the center of screen.

(Center of white window signal)

3.Adjust color temperature as follows by increasing or reducing numbers of NO.32,33,34.

PC color temperature (COOL)

x=0.277±0.002, y=0.289±0.002 at 10400K

4.Adjust color temperature as follows by increasing or reducing numbers of NO.35,36,37.

PC color temperature (NORM)

x=0.283±0.002, y=0.298±0.002 at 9300K

5.Adjust color temperature as follows by increasing or reducing numbers of NO.38,39,40.

PC color temperature (WARM)

x=0.313±0.002, y=0.329±0.002 at 6500K

Suggestion

1.Luminance of panel surface is less than 20lux to arrange adjustment environment

2.Color select mode is automatically set to COOL while adjustmentNo.32,33 and 34.

3.Color select mode is automatically set to NORM while adjustmentNo.35,36 and 37.

4.Color select mode is automatically set to WARM while adjustmentNo.38,39 and 40.

7.3 Video input black level/fundamental amplitude adjustment

How to Prepare

1.Connect Video input (NTSC 3.58),

Video level 0.714Vp-p, Sync level 0.286Vp-p, no set up

2.Appear and Adjust screen OSD Menu of Picture:

Contrast: 127 Brightness:0, Video level: NORMAL, Color Select: MID

How to Adjust

1.Set Service Adjust Mode and adjust as follows by Remote Control Transmitter

2.Set Adjustment No.35,36, and 37 scale to 255

3.Input all black level Signal

4.Set Adjustment No.41 to changing point from black to Red(set to black point)

5.Set Adjustment No.42 to changing point from black to Green(set to black point)

6.Set Adjustment No.43 to changing point from black to Blue(set to black point)

7.Input all white level Signal

8.Set Adjustment No.44 to changing point from Red to black(set to black point)

9.Set Adjustment No.45 to changing point from Green to black(set to black point)

10.Set Adjustment No.46 to changing point from Blue to black(set to black point)

Tolerances of each color adjustment numbers are less than 20, if more than 20, Re-adjust from above 2 steps.

7.4 Video color temperature adjustment

How to prepare

1.Connect Video input (NTSC 3.58),

Video level 0.714Vp-p ,Sync level 0.286Vp-p,no -set up

2.Input white window(33%) Signal.

2.Appear and Adjust screen OSD Menu of Picture:

Contrast:127 ,Brightness:0,Video level:NORMAL,GAMMA:2.2

How to Adjust

1.Set Service Adjust Mode and adjust as follows by Remote Control Transmitter.

2.Mesurement probe of CRT Color Analyzer CA-100 is set on the center of screen.

(Center of white window signal)

3.Adjust color temperature as follows by increasing or reducing numbers of NO.32,33,34.

Video color temperature (COOL)

x=0.269±0.002, y=0.266±0.002 at 14100K

4.Adjust color temperature as follows by increasing or reducing numbers of NO.35,36,37.

Video color temperature (NORM)

x=0.287±0.002, y=0.287±0.002 at 9400K

5.Adjust color temperature as follows by increasing or reducing numbers of NO.38,39,40.

Video color temperature (WARM)

x=0.314±0.002, y=0.315±0.002 at 6500K

Suggestion

1.Luminance of panel surface is less than 20lux to arrange adjustment environment

2.Color select mode is automatically set to COOL while adjustmentNo.32,33 and 34.

3.Color select mode is automatically set to NORM while adjustmentNo.35,36 and 37.

4.Color select mode is automatically set to WARM while adjustmentNo.38,39 and 40.

7.5 How to set to Service Adjustment Mode

Turn off the sub power button(or power button on the Remote Control Transmitter) then pushing RGB/VIDEO and SELECT buttons located on the bottom of the set and turn on the sub power button until “Service Adj. Mode” OSD is appeared(more than 5 seconds)

When fall out from Service Adjust Mode, turn off the sub power button(or power button on the Remote Control Transmitter).

THE UPDATED PARTS LIST

FOR THIS MODEL IS

AVAILABLE ON ESTA

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